IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	09/916,064
Applicant	:	Michael A. Seigler et al.
Filed	:	July 26, 2001
Title	:	METHOD FOR MAKING A MAGNETORESISTIVE
	:	SENSOR
Art Unit	:	3729
Examiner	:	Paul D. Kim
Docket No.	:	SEAG 48089

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

November 26, 2003

AMENDMENT

SIR:

In response to the Office Action dated September 4, 2003, please amend the subject application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims begin on page 4 of this paper.

Remarks begin on page 9 of this paper.

Amendments to the Specification:

Please amend the third paragraph on page 8, beginning at line 7, as follows:

A reactive ion etch can achieve this, but other chemically enhanced etches can also achieve this. The remaining buffer layer is then etched away to produce the structure shown in Figure 7. Various types of etching can be used as long as the etch rate of the buffer layer is greater than the etch rate of the stop layer. Reactive ion etching can achieve this, as can chemically enhanced etches. If the materials are chosen properly even a purely physical etch may work, for example, Cu as the buffer layer and Ta as the stop layer. Figure 8 is a top plane view of the structure of Figure 7 in which a permanent magnet material layer 66 has been deposited adjacent to the GMR stack 34. The permanent magnet material layer is embedded in the structure in accordance with ~~know~~ known processes that do not form a part of this invention.

Please amend the Abstract as follows:

ABSTRACT OF THE DISCLOSURE

A method for making a magnetic sensor for a disk drive read head comprises the steps of fabricating a giant magnetoresistive stack on a surface of a layer of bottom shield material, the giant magnetoresistive stack including an etch stop layer positioned on an end of the giant magnetoresistive stack opposite the surface and a buffer layer positioned on the etch stop layer, depositing an insulating material on the giant magnetoresistive stack and the surface of the layer of bottom shield material, planarizing the insulating material to form a top surface of the insulating material lying in a plane adjacent to or passing through the buffer layer, vacuum etching the buffer layer, and depositing a top shield layer on the insulating material and the giant magnetoresistive stack. ~~A self-planarizing material can also be deposited on the insulating material. If the giant magnetoresistive stack is fabricated without the buffer layer and etch stop layer, then the self-planarizing material and the insulating material can be planarized using a vacuum etch process until a surface of the insulating material lies in a plane adjacent to an end of the giant magnetoresistive stack. Alternatively, the self-planarizing material can be applied without the insulating material,~~